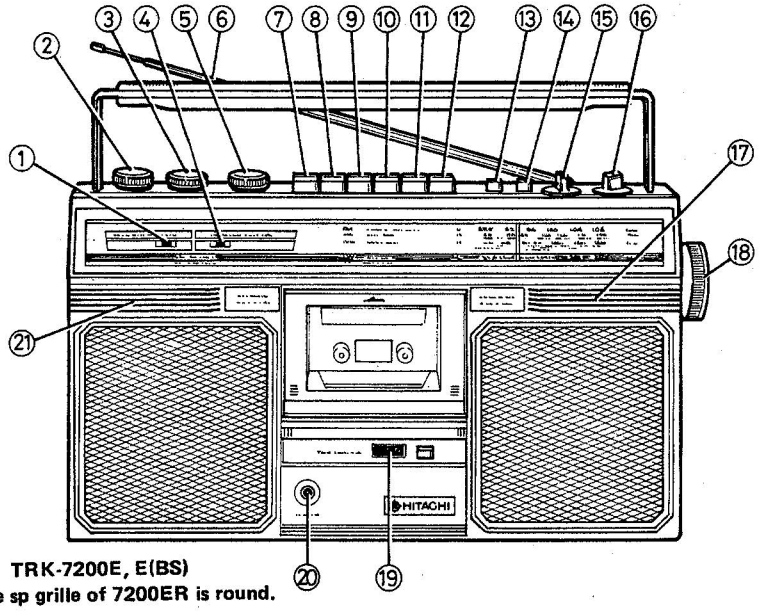
HITACHI

TRK-7200E,E(BS),ER

SERVICE MANUAL

No. 1449



TRK-7200E, E(BS)
The sp grille of 7200ER is round.

KEY TO ILLUSTRATIONS

① RECORD/BATTERY INDICATOR
② BALANCE CONTROL
③ TONE CONTROL
④ FM STEREO INDICATOR
⑤ VOLUME CONTROL
⑥ TELESCOPIC ANTENNA (AERIAL)
⑦ PAUSE BUTTON
⑧ STOP/EJECT BUTTON
⑨ PLAYBACK BUTTON
⑩ FAST FORWARD BUTTON
⑪ REWIND BUTTON
⑫ RECORD BUTTON
⑬ MODE SWITCH
⑭ AFC SWITCH
⑮ FUNCTION SELECTOR
⑯ BAND SELECTOR
⑰ BUILT-IN MICROPHONE (RIGHT)
⑱ TUNING CONTROL
⑲ TAPE COUNTER
⑳ HEADPHONE SOCKET
㉑ BUILT-IN MICROPHONE (LEFT)

SPECIFICATIONS

GENERAL SECTION

Semi-conductors:	IC: 1 Transistors: 22 Diodes: 15 Vari-cap: 1 Varistors: 3 LED's: 2
Power (Mains) Supply:	AC: 220V, 50 Hz [For E] 240V, 50 Hz [For E(BS)] DC: 9V (IEC R20 x 6 or equivalent)
Power (Mains) Consumption:	14W
Dimensions:	244(H) x 425(W) x 135(D) mm
Weight:	4.3 kg (with batteries)
Power output:	2 w/ch (T.H.D. 10%) , 6w/ch M.P.O.
Speaker:	100 mm 3.2 ohms x 2

TUNER SECTION

Circuit System:	FM/SW/MW/LW 4-band superheterodyne
Tuning Range:	FM: 87.5 to 108 MHz SW: 6 to 18 MHz MW: 530 to 1605 kHz LW: 150 to 350 kHz
Sensitivity:	FM: 11 dB (pra.) 3 dB (max.) SW: 30 dB (pra.) 20 dB (max.) MW: 47 dB (pra.) 37 dB (max.) LW: 53 dB (pra.) 48 dB (max.)
Intermediate Frequency:	FM: 10.7 MHz SW/MW/LW: 465 kHz
Antennas (Aerials):	FM/SW: Telescopic antenna(aerial) MW/LW: Built-in ferrite-core antenna (aerial)

TAPE RECORDER SECTION

Tape:	Cassette tape (C-30, 60, 90)
Tape Speed:	4.75 cm/s
Recording System and Bias Frequency:	AC bias, 33 kHz
Erasing System:	DC erase
Track System:	4 track 2 channel
Frequency Response:	60 Hz to 10 kHz
S/N (Signal to Noise Ratio):	45 dB
Wow and Flutter:	0.25% (WRMS)
Cross Talk:	65 dB
Erase Ratio:	60 dB
Input Sensitivity and Impedance:	Microphone: – 55 dB, 700 ohms Record/Playback (DIN): 100 mV, 700 ohms
Output Level and Impedance:	Record/Playback (DIN): 700 mV, 2 kohms Headphone: 8 ohms Speaker: 3.2 ohms
Fast Forward or Rewinding Time:	105 sec (Using C-60)
Distortion:	3%
Motor:	DC motor

CASSETTE TAPE RECORDER WITH FM/SW/MW/LW RADIO

Nov. 1980

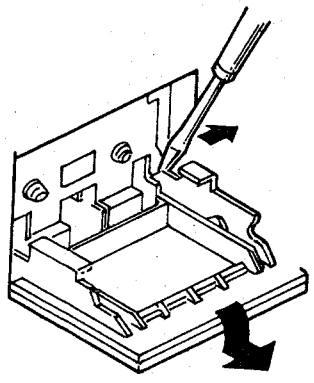
SAFETY PRECAUTION

The following precautions should be observed when servicing.

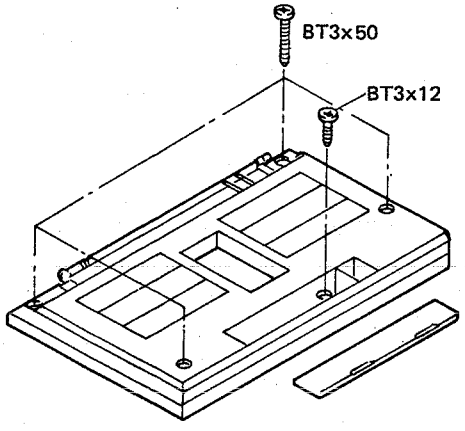
1. Since many parts in the unit have special safety-related characteristics, always use genuine Hitachi's replacement parts. Especially critical parts in the power circuit block should not be replaced with other makes.
   Critical parts are marked with ⚠ in the schematic diagram, and circuit board diagram.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

DISASSEMBLY

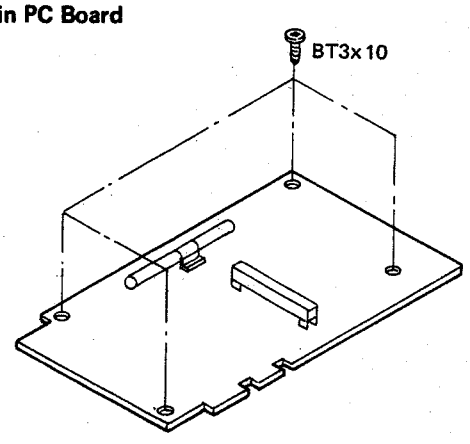
1. Cassette Lid



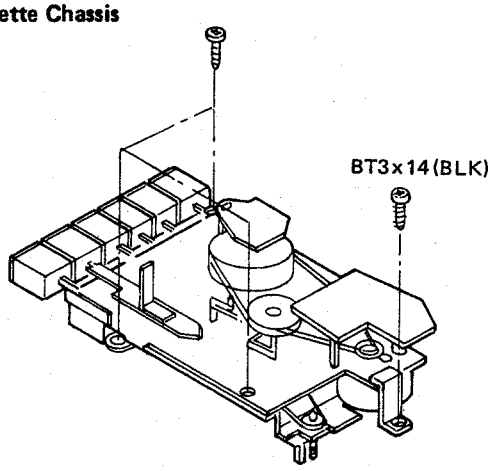
2. Rear Case



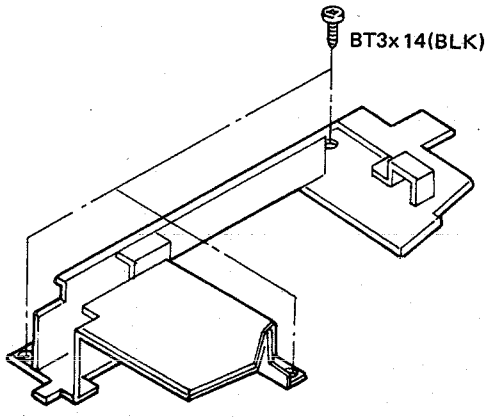
3. Main PC Board



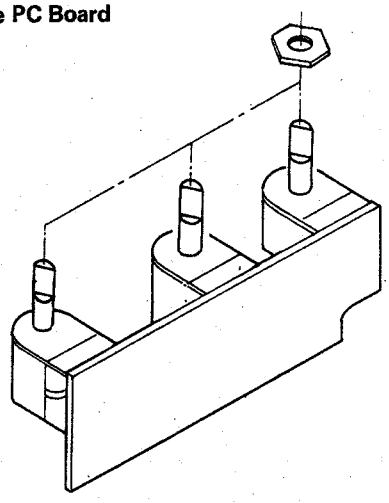
4. Cassette Chassis



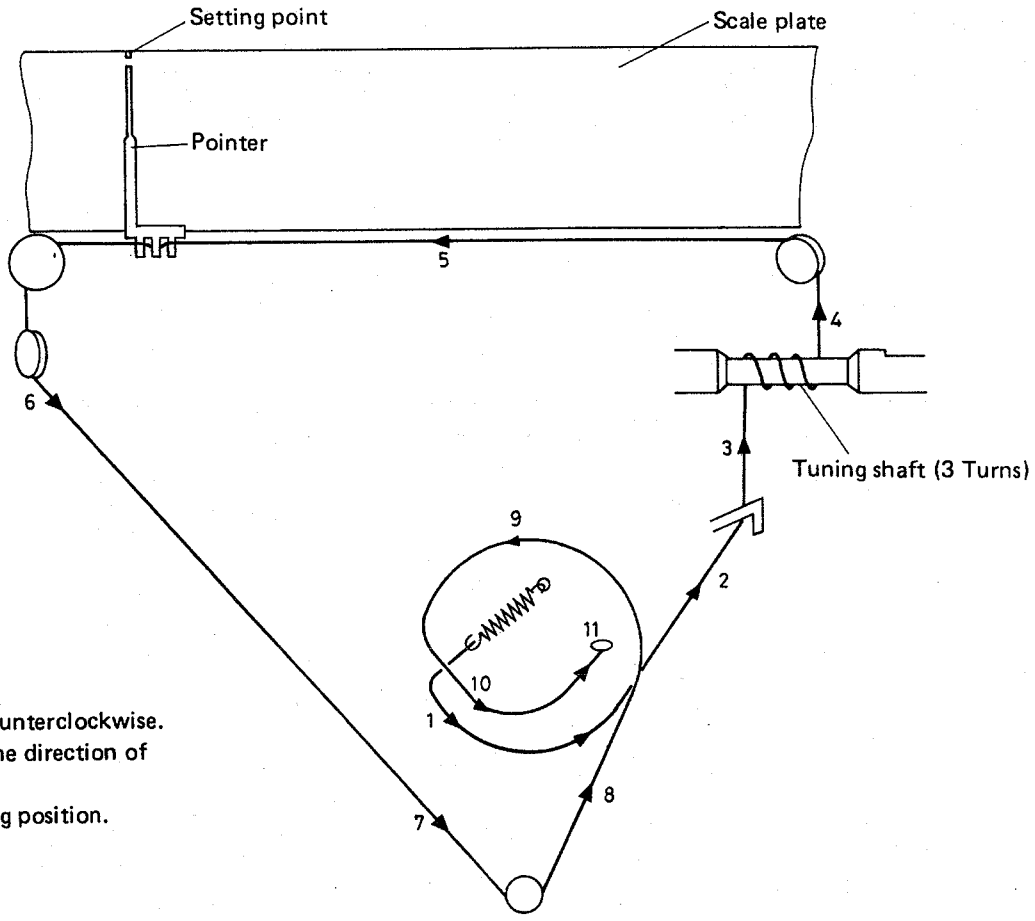
5. Radio Chassis



6. Volume PC Board



DIAL CORD STRINGING



STRINGING METHOD

1. Turn the pulley fully counterclockwise.
2. String the dial cord in the direction of arrow. (Nos. 1 – 11).
3. Set the pointer to setting position.

LUBRICATION

Lubricate one or two drops of oil to rotating point or lubricate grease to sliding point. Lubricate the respective parts listed below once every 1000 hours or once a year under normal conditions of use. Avoid oiling them excessively, or rotation may become irregular because of oil splashes.

Lubrication		Oil or Grease
Spring resonance prevention		Froil (GB-TS-1)
Rotaly section	Metal and metal	Pan motor oil (10W - 40)
	Mold and metal	Sonic slider oil (#1600)
Sliding section	Metal and metal	Hitasol (MO-138)
	Mold and mold Mold and metal	White grease (FL-LUBE-A)

INSPECTION

Mode	Item	Pressure or Torque
Playback	Pressure of pressure roller	400~600 gr
	Take-up torque	45~65 gr-cm
	Supply reel back tension	1~4 gr-cm
Rewind	Rewind torque	65~140 gr-cm
Fast forward	Fast forward torque	65~140 gr-cm

ADJUSTMENT

Tuner

* West Germany

STEP	ADJUSTMENT ITEM		GENESCOPE GENERATOR	TERMINAL IN PUT	TERMINAL OUTPUT	DIAL POINTER POSITION	ADJUST	READING
1	FM IF	Tune	10.7 MHz	TP101	TP302 (TP303)	High end	T203	Note 1
							T101 TP202	Max.
		S-Curve					T203	Note 2
2	FM RF	Covering	87 MHz *87.5 MHz	Antenna terminal with durmmy antenna P103		Low end	L104	Max.
			109 MHz *108 MHz			High end	CT102	
		Tracking	90 MHz			90 MHz	L101	
			106 MHz			106 MHz	CT101	
3	AM IF		465 kHz	Ferrite-core antenna	TP221	High end	T151 T201 T204	Max.
4	SW RF	Covering	5.8 MHz	Antenna terminal (with durmmy antenna P103)	TP221	Lowest	L154	Max.
			18.5 MHz			Highest	CT154	
		Tracking	6.5 MHz			6.5MHz	L151	
			16 MHz			16MHz	CT151	
5	MW RF	Covering	515 kHz	Ferrite-core antenna	TP221	Lowest	L155	Max.
			1650 kHz			Highest	CT155	
		Tracking	600 kHz			600 kHz	L152	
			1400 kHz			1400 kHz	CT152	
6	LW RF	Covering	145 kHz	Ferrite-core antenna	TP221	Lowest	L156	Max.
			360 kHz			Highest	CT157	
		Tracking	160 kHz			160 kHz	L153	
			330 kHz			330 kHz	CT153	
7	FM MPX		—	Note 3	TP301	—	RT302	19kHz±100Hz
8	FM Separation		98 MHz 60 dB L+R (1kHz): 40kHz dev. Pilot (19kHz): 6kHz dev.	Antenna terminal (with durmmy antenna P103)	TP302 (TP303)	98 MHz	RT301	Minimum Note 4

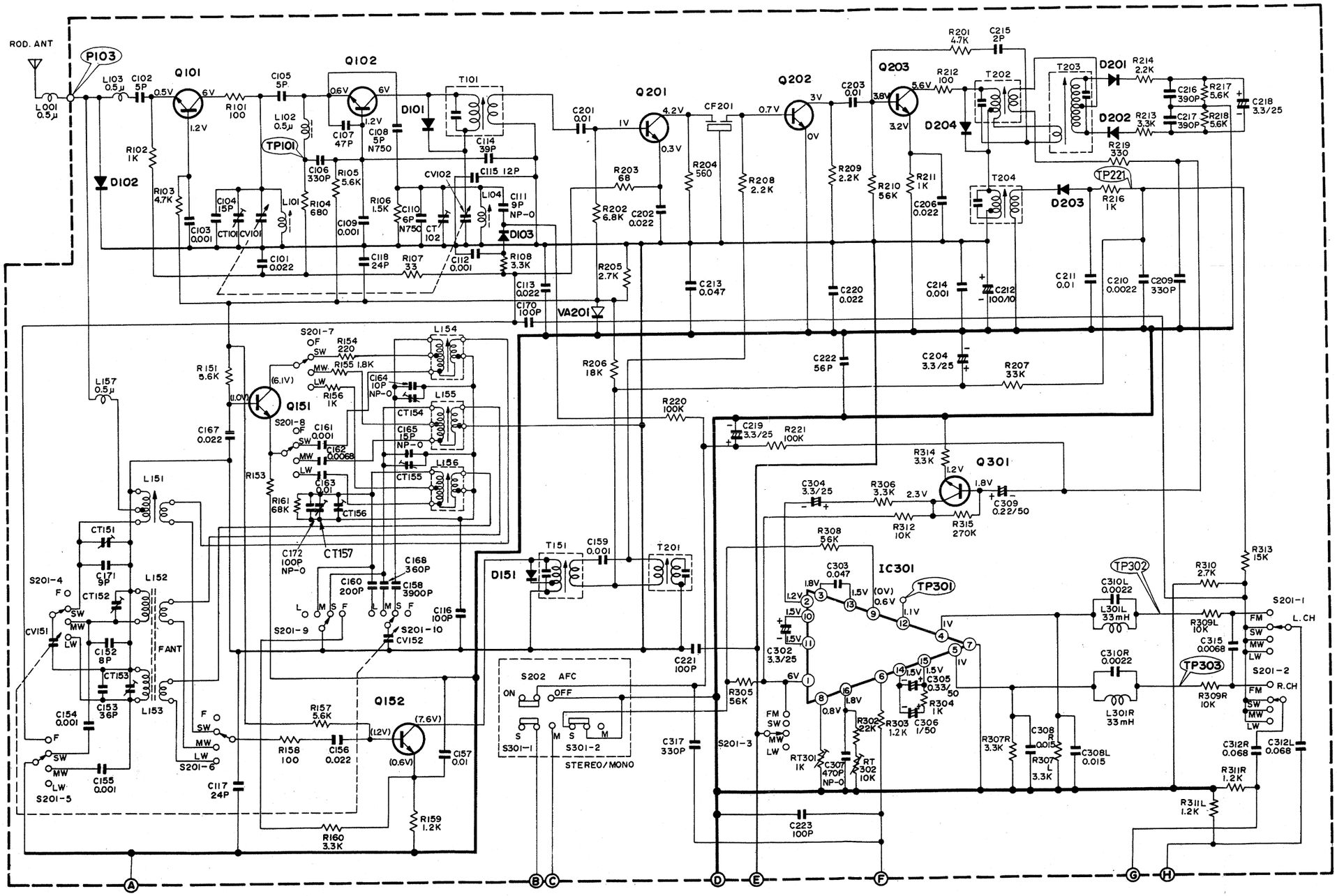
Note 1. Before FM IF adjustment, turn T203 fully counterclockwise.
Note 2. Adjust T203 so that the output is like the S-curve for symmetorical sinewave.
Note 3. Connect a 10μF/25V electrolytic capacitor between the No.2-pin of IC301 and ground.
Note 4. 1) After feeding in of R channel and pilot signals, adjust RT301 for a minimum L channel output.
2) Optimize RT301 so that the leak level of the L channel signal is equal to that of the R channel signal.

TAPE RECORDER

STEP	ADJUSTMENT ITEM	TAPE	MODE	TERMINAL OUTPUT	TERMINAL INPUT	ADJUST	READING
1	Head azimuth	MTT-114 third section	Playback	R/P Socket	—	Azimuth adjustment screw	Maximum output

SCHEMATIC DIAGRAM

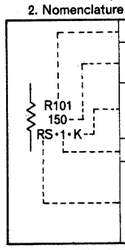
D102	Q101	Q102	D101	D103	VA201	Q201	Q202	Q203	D204	D203	D201, 202
IS2076	HIT9016G	HIT9016G	IS2076	IS2790	VD1211	2SC829C	2SC829C	2SC829C	IS2076	IK34A	IK60R x2
PROTECTOR	FM RF AMP.	FM CONV.	FM LIMIT	AFC	VOLT STAB.	FM IF AMP.	AM/FM IF AMP.	AM/FM IF AMP.	FM LIMIT	AM DET.	FM DISCRI



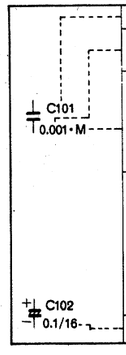
Q151	Q152	D151	IC301	Q301
HIT9016G	2SC829C	IK60R	HA11227	2SC945P
AM OSC	AM MIX	AGC	FM MPX	PRE AMP.

Note

1. Voltage measured at base of chassis with minimum volume control and no signal.
2. Nomenclature of Resistors and Capacitors.



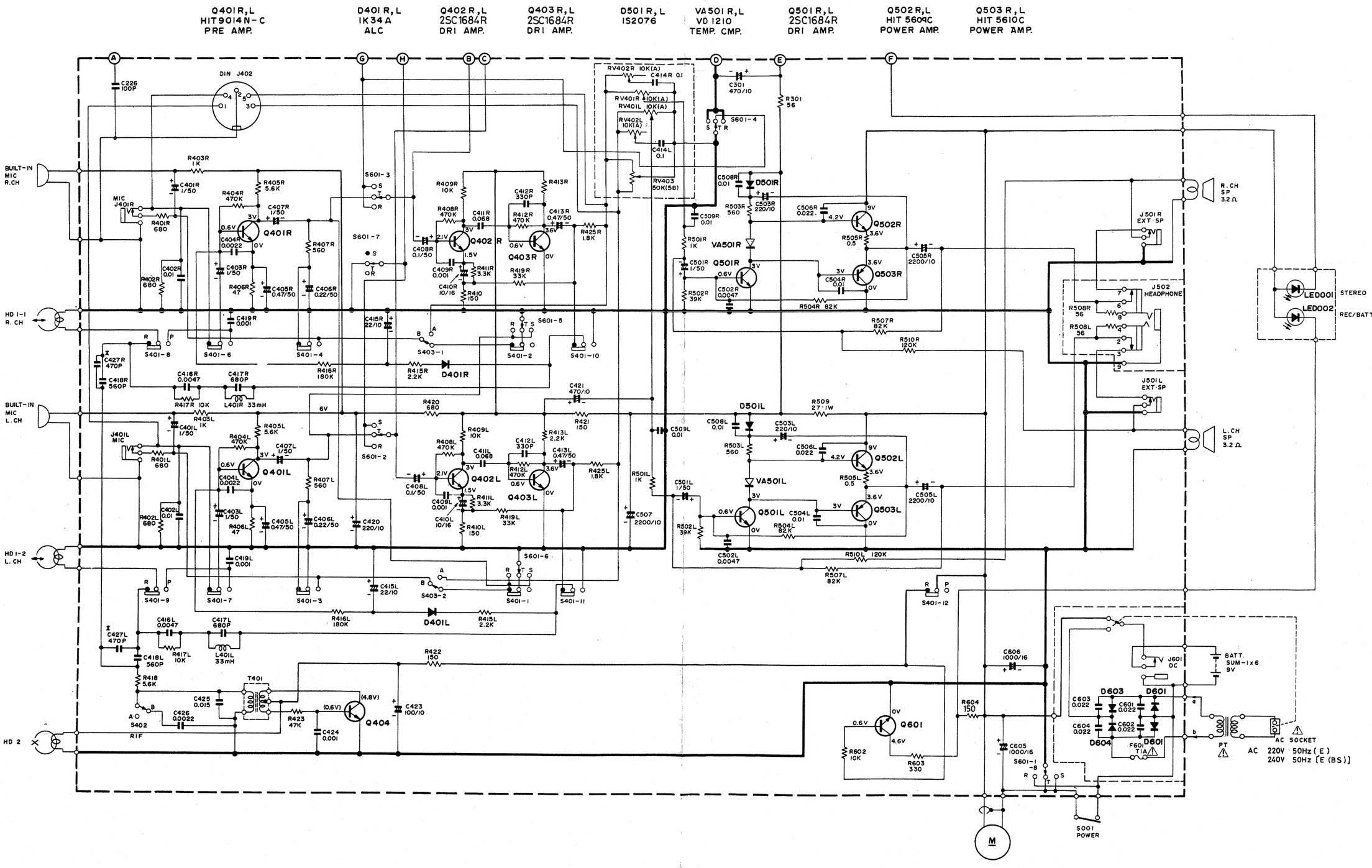
	Circuit No.
Value	No indicated Ω (Ohm) M : 1000kΩ
Tolerance	No indicated ±5% K : ±10% M : ±20%
Wattage	No indicated ¼W
Sort	No indicated Carbon film RC : Composition RW : Wire wound RS : Oxide metal film RN : Fixed metal film



	Circuit No.	
Value	No indicated μF P : PF	
Tolerance	No indicated ±10% J : ± 5% M : ±20% Z : +80%, −20% D : ±0.5pF C : ±0.25pF	
Sort		Ceramic
		Electrolitic
		Mylar
		Polyester
		Styrol
Voltage	No indicated 50WV	

3. Be sure to make your orders of resistors and capacitors with value, voltage, tolerance and sort.
4. When replacing capacitors marked with ※, use specified ones stated on parts list since required temperature characteristics.

SCHEMATIC DIAGRAM



Q404
2SC1684R
REC. BIAS OSC.

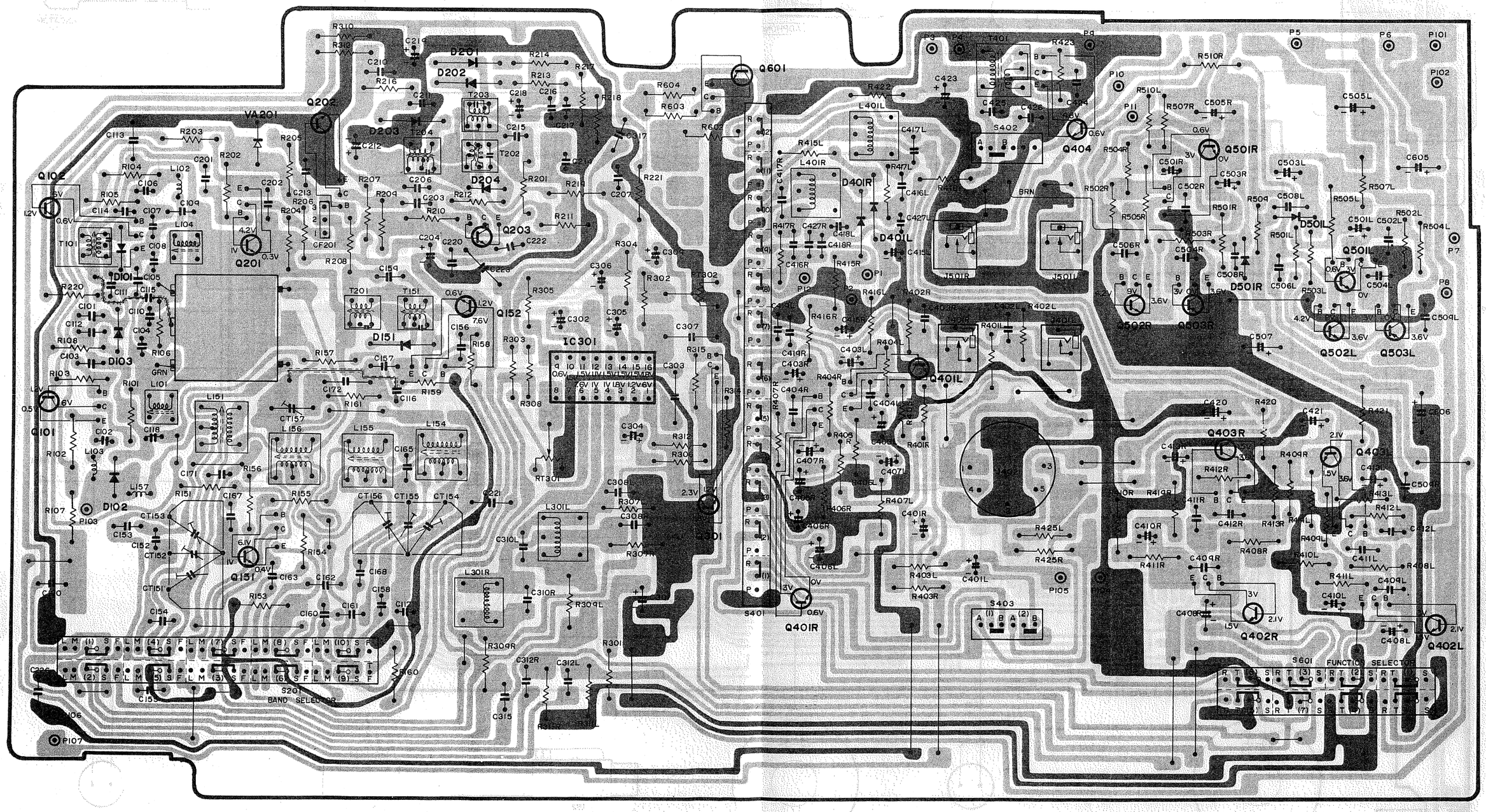
Q601
2SC1684R
LED CONTROL

D601,602,603,604
F-14Ax4
RECT.

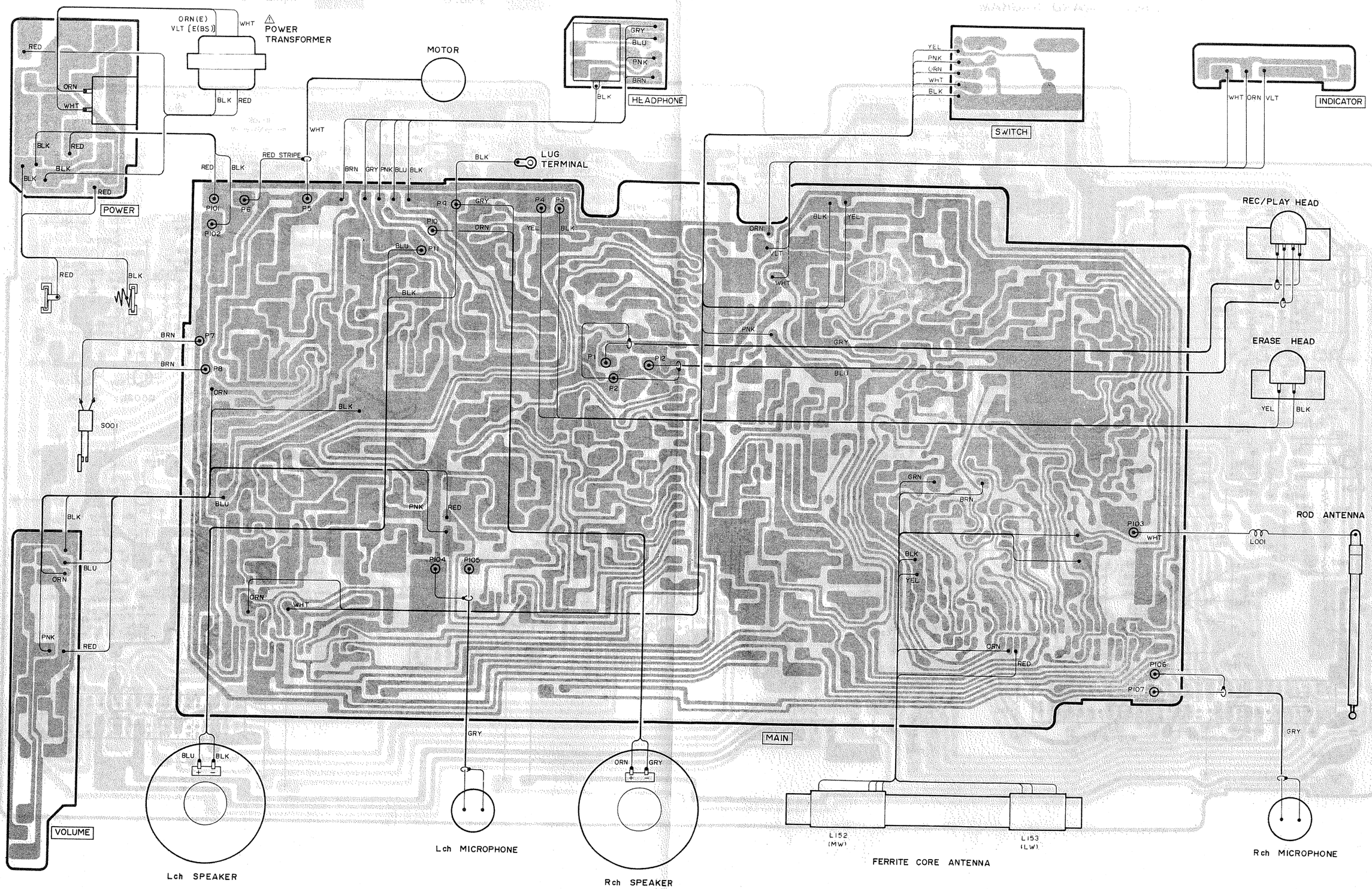
CIRCUIT BOARD DIAGRAM

: Ground

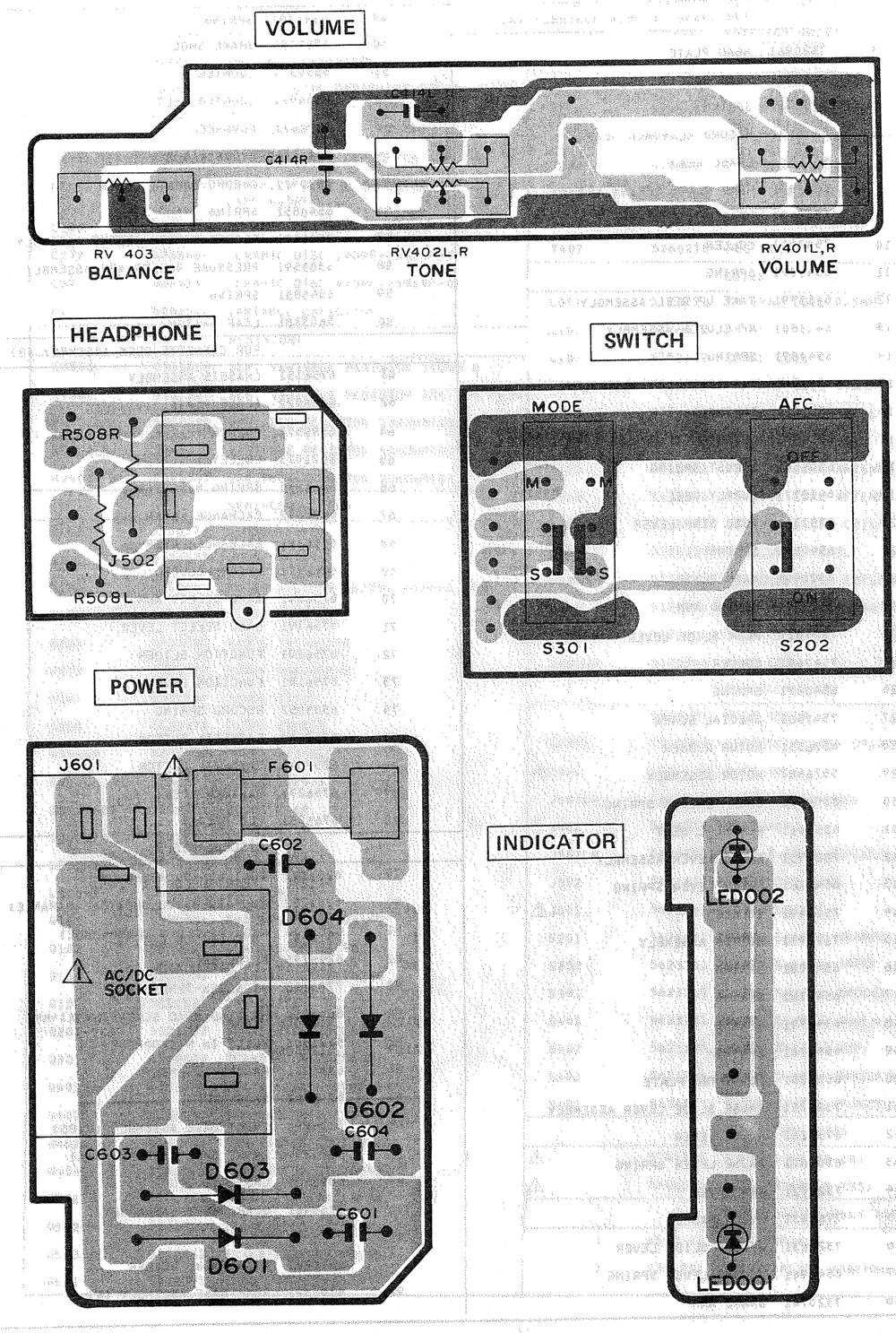
: Signal, +B

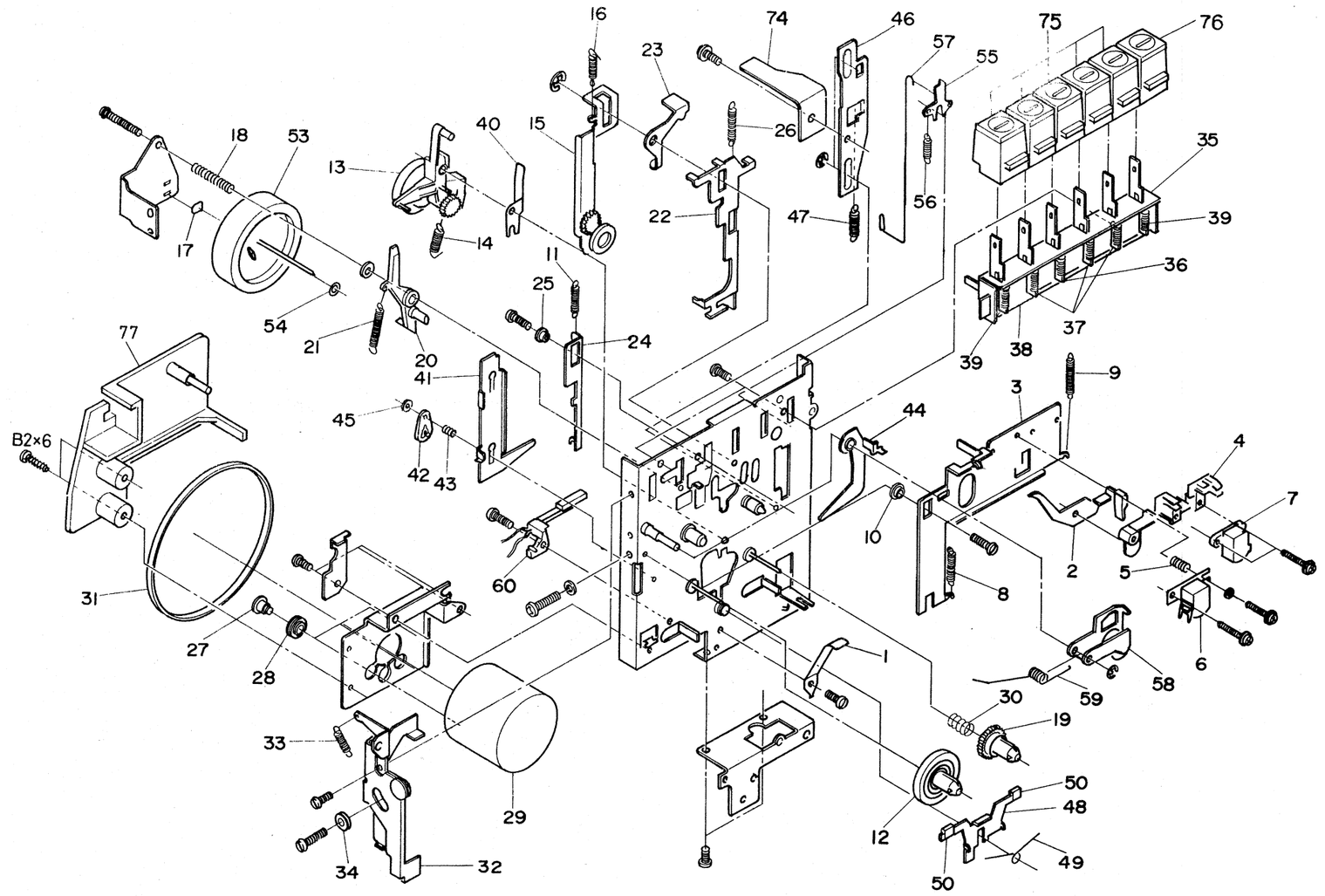


WIRING DIAGRAM

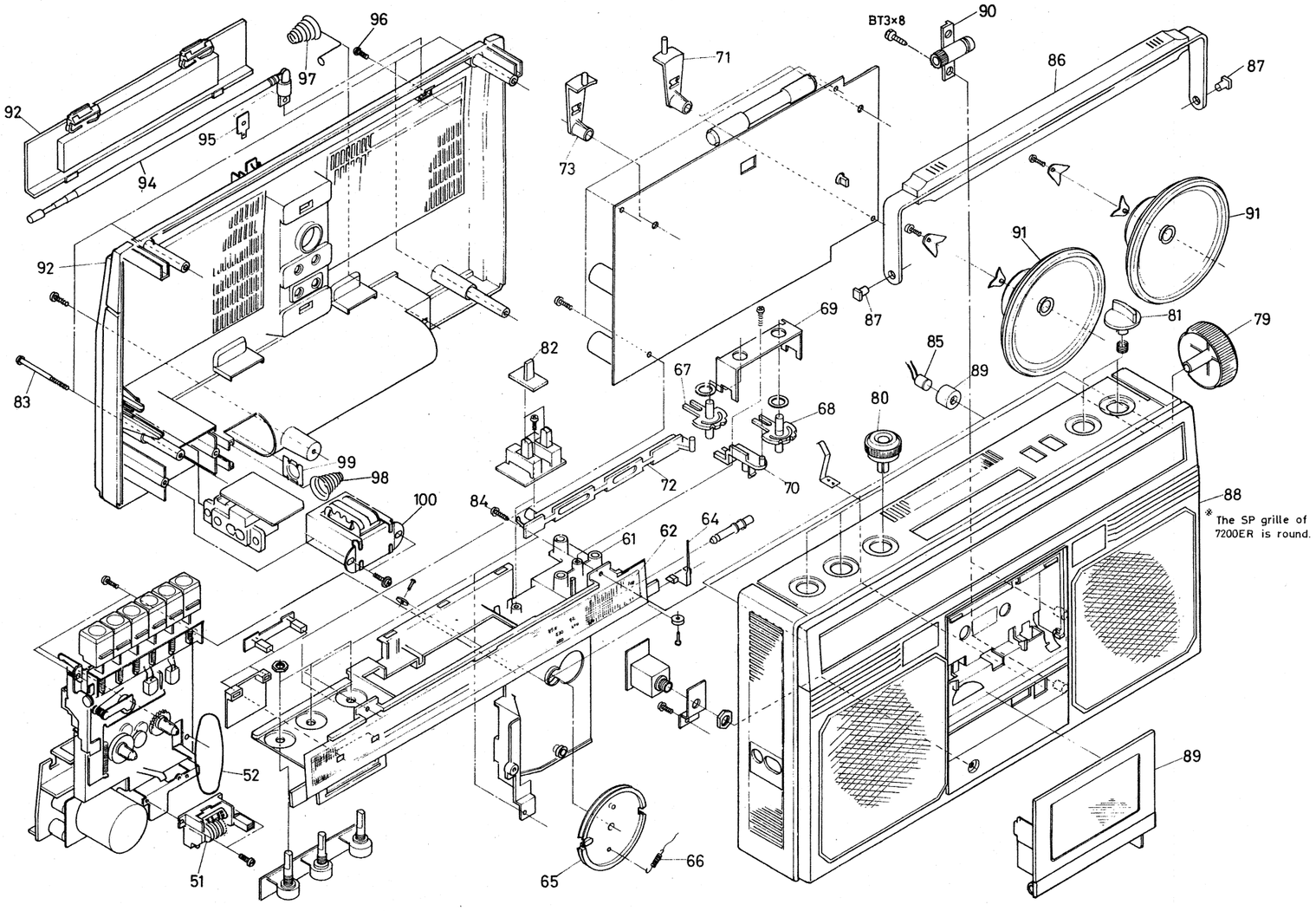


CIRCUIT BOARD DIAGRAM



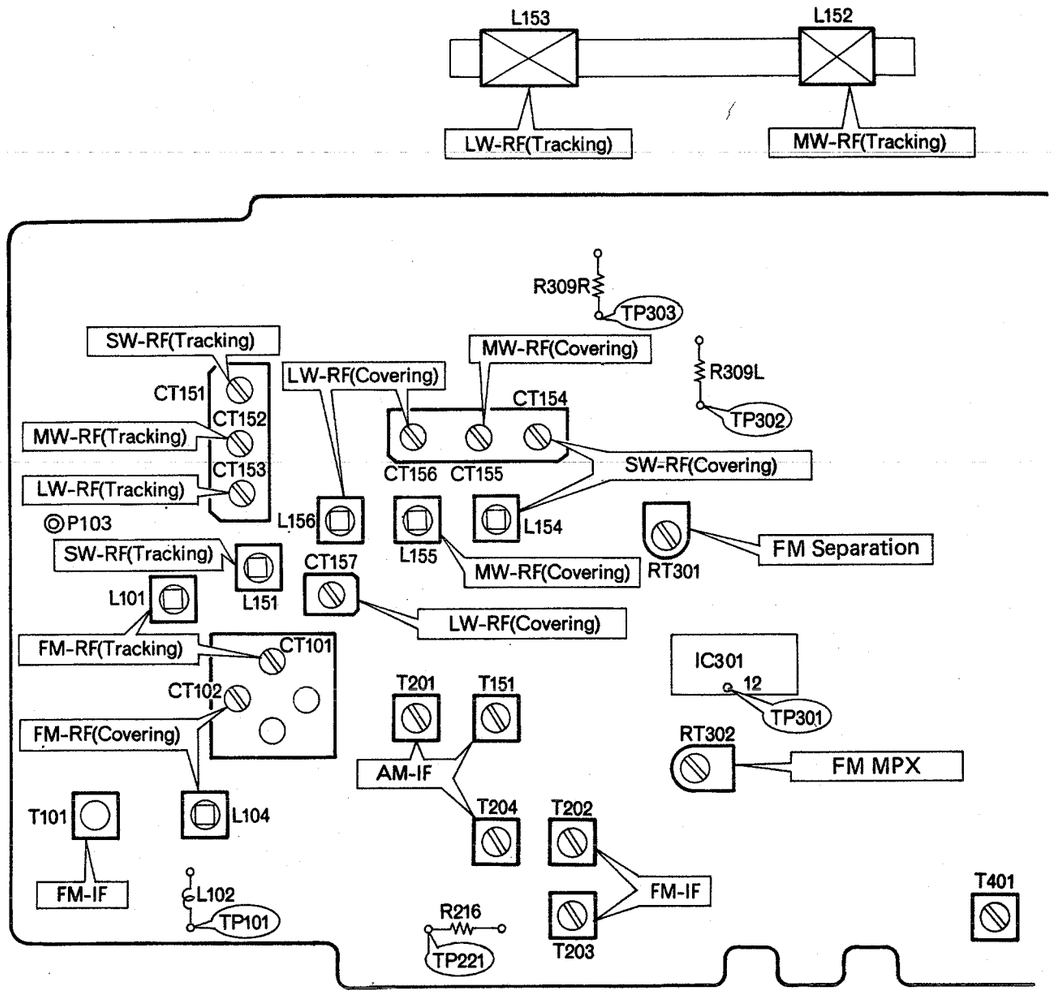


Note:
Components marked without numbers in this drawing are not specified as replacement parts.



Note:
Components marked without numbers in this drawing are not specified as replacement parts.

ADJUSTMENT PARTS LOCATION



REPLACEMENT PARTS LIST

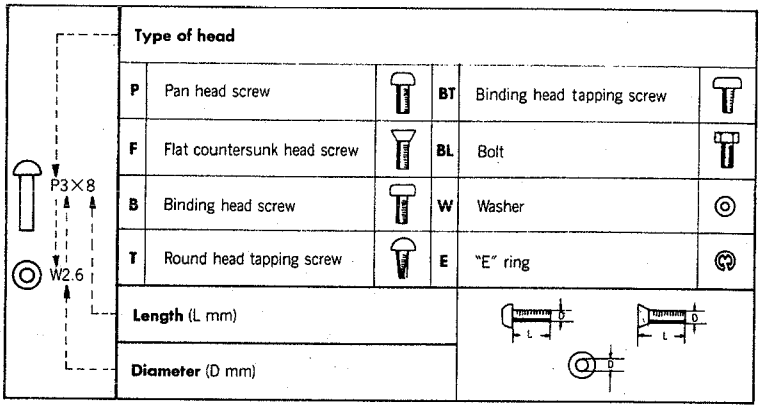
SYMBOL-NO	P-NO	DESCRIPTION
		CAPACITORS
CT151-156	0283565	VARIABLE CAPACITOR
CT157	0283113	VARIABLE CAPACITOR
C108	0248475	CERAMIC DISC CAPACITOR 5PF +- 0.5PF
C110	0248476	CERAMIC, DISCAL CAPACITOR 6PF+-0.5PF
C111	0246429	CERAMIC, DISC CAPACITOR 9PF
C164	0246430	CERAMIC, DISCAL CAPACITOR 10PF 0.5PF
C165	0246474	CERAMIC DISC 15PF+-10%(NP-0)
C172	0246464	CERAMIC DISC 100PF+-5%(NP-0)
C307	0249537	CERAMIC DISC 470PF+-5%(NP-0)
PVC	5052012	VARIABLE CAPACITOR
		RESISTORS
RT301	0151806	SEMI VARIABLE RESISTOR 1KOHM B
RT302	0151808	SEMI VARIABLE RESISTOR 10K OHM RS88
RV401LR	5000295	VARIABLE RESISTOR 10KOHM(A)
RV402LR	5000295	VARIABLE RESISTOR 10KOHM(A)
RV403	5000593	VARIABLE RESISTOR 50KOHM(B)
		SEMI-CONDUCTORS
D101	5330573	DIODE 1S2473
D102	5330573	DIODE 1S2473
D103	5330661	DIODE SILICON LS2790 200MHZ 80MW
D151	5331052	DIODE 1K60RLF-2
D201	5331052	DIODE 1K60RLF-2
D202	5331052	DIODE 1K60RLF-2
D203	5331501	DIODE 1K34A
D204	5330573	DIODE 1S2473
D401LR	5331502	DIODE 1K34ALF
D501LR	5330573	DIODE 1S2473
D601-604	5331201	DIODE F14A
IC301	5350683	IC HA11227
LED001	5380593	LED LN417RP
LED002	5380593	LED LN417RP
Q101	5322551	TRANSISTOR HIT9016G
Q102	5322551	TRANSISTOR HIT9016G
Q151	5322551	TRANSISTOR HIT9016G
Q152	5321282	TRANSISTOR 2SC1675K
Q201-203	5321282	TRANSISTOR 2SC1675K
Q301	5320813	TRANSISTOR 2SC945P
Q401LR	5322591	TRANSISTOR HIT9014N-C
Q402LR	5322791	TRANSISTOR 2SC1684R
Q403LR	5322791	TRANSISTOR 2SC1684R
Q404	5322791	TRANSISTOR 2SC1684R
Q501LR	5322791	TRANSISTOR 2SC1684R
Q502LR	5322542	TRANSISTOR HIT5609C
Q503LR	5322532	TRANSISTOR HIT5610C
Q601	5322791	TRANSISTOR 2SC1684R

SYMBOL-NO	P-NO	DESCRIPTION
VA201	5340202	VARISTOR VD1211
VA501LR	5340201	VARISTER VD1210
		TRANSFORMERS
T101	5140111	FM IF TRANSFORMER
T151	5130211	AM IF TRANSFORMER
T201	5130212	AM IF TRANSFORMER
T202	5140112	FM DISCRIMINATOR
T203	5140113	FM DISCRIMINATOR
T204	5130213	AM IF TRANSFORMER
T401	5260218	REC OSCT
		COILS
L001	5123271	FM TRAP COIL 0.5MH
L101	5126692	FM RF
L102	5152162	CHOKE COIL
L103	5123271	FM TRAP COIL 0.5MH
L104	5126693	FM OSCILLATOR COIL
L151	5123771	SW ANTENNA COIL
L152	5112901	FERRITE CORE ANTENNA
L153	5112901	FERRITE CORE ANTENNA
L154	5123772	SW OSCILLATOR COIL
L155	5120319	OSCILLATOR COIL
L156	5120466	LW OSCILLATOR COIL
L157	5123271	FM TRAP COIL 0.5MH
L301LR	5120306	TRAP COIL
L401LR	5120306	TRAP COIL
		MISCELLANEOUS
	5659121	BACK COVER
CF201	5160211	CERAMIC FILTER CF107A
⚠F601	5720179	FUSE 1A
J401LR	5673241	JACK-3.5MMD (MIC)
J402	5653211	DIN JACK
J501LR	5673241	JACK-3.5MMD (EXT.MIC)
J502	5671631	HEADPHONE JACK
⚠J601	5653241	AC-DC SOCKET
S201	5625011	SLIDE SWITCH (BAND)
S202	5623761	SLIDE SWITCH (AFC)
S301	5623761	SLIDE SWITCH (MODE)
S401	5623751	SLIDE SWITCH (REC./P.B.)
S402	5621184	SLIDE SWITCH (RIF)
S403	5621184	SLIDE SWITCH (MIC/SP SWITCH)
S601	5624201	SLIDE SWITCH (FUNCTION)
		FOR ACCESSARIES
⚠	5747321	POWER CORD (E,ER)
⚠	5746341	CORD ASSEMBLY (BS)
		FOR CASSETTE DECK ASSEMBLY (A)
1	6533421	PACK SPRING
2	7321261	PIC UP PLATE ASSEMBLY

SYMBOL-NO	P-NO	DESCRIPTION
		FOR CASSETTE DECK ASSEMBLY (A)
3	7320961	HEAD PLATE
4	6757321	HEAD BLOCK
5	6305631	SPRING
6	5444871	RECORD PLAYBACK HEAD
7	5445301	ERASE HEAD
8	6540831	HEAD PLATE SPRING (R)
9	6540821	HEAD PLATE SPRING (L)
10	7547611	COLLER
11	6541071	SPRING
12	6413791	TAKE UP REEL ASSEMBLY
13	6413801	RF CLUTCH ASSEMBLY
14	6540891	SPRING
15	7321241	F.F IDLER ARM ASSEMBLY
16	6540861	SPRING
17	6757371	FLYWHEEL BEARING
18	6305641	THRUST SPRING
19	6413771	SUPPLY REEL
20	6757361	AUTO STOP LEVER
21	6540881	SPRING
22	7320991	MAIN PLATE
23	7321001	REWIND ARM
24	7321011	PLAY SLIDE LEVER
25	7547691	COLLER
26	6540871	SPRING
27	7547561	SPECIAL SCREW
28	6576331	MOTOR RUBBER
29	5576482	MOTOR ASSEMBLY
30	6305581	BACK TENSION SPRING
31	6357411	FLYWHEEL BELT
32	7321951	EJECT LEVER ASSEMBLY
33	6540761	EJECT LEVER SPRING
34	7547491	COLLER
35	7128931	BUTTON ASSEMBLY
36	6541081	SPRING
37	6540751	SPRING
38	6540791	SPRING
39	6540781	SPRING
40	6533201	REW SPRING PLATE
41	7321251	PAUSE SLIDE LEVER ASSEMBLY
42	6757261	PAUSE LEVER
43	6305601	PAUSE LEVER SPRING
44	7320721	ARM LEVER
45	7787431	NYLON WASHER
46	7320831	RECORD SLIDE LEVER
47	6540941	RECORD LEVER SPRING
48	7320741	BRAKE ARM
49	6545791	SPRING
50	6587151	BRAKE SHOE
51	5559371	COUNTER
52	6354961	COUNTER BELT
53	6373471	FLYWHEEL
54	7787451	NYLON WASHER
55	7320971	RECORD SAFETY LEVER
56	6540851	SPRING
57	7547671	RECORD SAFETY SPORKE ASSEMBLY
58	6383591	PRESSURE ROLLER ARM ASSEMBLY
59	6545831	SPRING
60	5603381	LEAF SWITCH
		FOR CASSETTE DECK ASSEMBLY (B)
61	6756151	CHASSIS ASSEMBLY
62	6468022	SCALE PLATE
64	6395571	POINTER
65	6421073	PULLEY
66	6316231	SPRING M
67	6750822	EXCHANGE LEVER
68	6750821	EXCHANGE LEVER
69	6756211	LEVER HOLDER
70	6756641	BAND SELECT ARM
71	6756191	BAND SELECT LEVER
72	6756201	FUNCTION SLIDER
73	6756181	FUNCTION LEVER
74	6533052	RECORD SPRING
75	6257543	CASSETTE BUTTON
76	6257544	CASSETTE BUTTON
77	6756271	P.W.B HOLDER
78	6765051	LED HOLDER
		MISCELLANEOUS
79	6283372	TUNING KNOB ASSEMBLY
80	6283282	KNOB-25MMD(VOLUME,TONE,BARANCE)
81	6282704	KNOB ASSEMBLY (BAND,MODE)
82	6296793	SLIDE KNOB
83	7781148	BT SCREW-3MMDX50MM
84	8699414	BT BIND HEAD SCREW-3MMDX14MM
85	5421506	BUILT IN MICROPHONE
86	6334101	HANDEL ASSEMBLY
87	6746951	SHAFT
88	6105292	FRONT CASE ASSEMBLY (E,BS)
	6105294	FRONT CASE ASSEMBLY (ER)
89	6093181	CASSETTE LID
90	6763961	GEAR DAMPER ASSEMBLY
91	5405441	SPEAKER
	6570221	MICROPHONE HOLDER
92	6105323	REAR CASE ASSEMBLY (E)

SYMBOL-NO	P-NO	DESCRIPTION
		MISCELLANEOUS
	6105324	REAR CASE ASSEMBLY (BS)
	6105327	REAR CASE ASSEMBLY (ER)
93	6173784	BATTERY LID ASSEMBLY
94	5752351	ROD ANTENNA
95	5681361	ANTENNA TERMINAL

SYMBOL-NO	P-NO	DESCRIPTION
96	8744410	BINDING SCREW-3MMDX10MM
97	6308961	SPRING
98	0681129	SPRING A
99	7450344	BATTERY TERMINAL
⚠ 100	5211921	POWER TRANS 4VA>400G (E>ER)
⚠	5212651	POWER TRANSFORMER (BS)



When ordering hardware excluding stated on these lists, be sure to make your orders with type and size.